



U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Species Account



SAN FRANCISCO GARTER SNAKE
Thamnophis sirtalis tetrataenia

CLASSIFICATION: Endangered
Federal Register 32:4001; March 1967
http://ecos.fws.gov/docs/federal_register/fr18.pdf

CRITICAL HABITAT: None designated

RECOVERY PLAN: Final
September 11, 1985
http://ecos.fws.gov/docs/recovery_plan/850911.pdf



In April 2005, 10 juvenile San Francisco garter snakes of five mixed gender pairs were transported from the Netherlands to the zoo. These ten snakes will be used as part of a public education effort that will include classroom visits from the Zoo Mobile, on-site presentations, inclusion in VIP tours and interpretive graphic displays, which are intended to inform local residents about the plight of the snake.

DESCRIPTION:

The San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) is a slender, colorful snake in the Colubridae family, which includes most of the species of snakes found in the western United States. This subspecies has a burnt orange head, greenish-yellow dorsal stripe edged in black, bordered by a red stripe, which may be continuous or broken with black blotches, and then a black stripe. The belly color varies from greenish-blue to blue. Large adults can reach 3 feet or more in length.

Females give live birth from June through September, with litters averaging 16 newborn. The snakes are extremely shy, difficult to locate and capture, and quick to flee to water or cover when disturbed.

The snakes' preferred habitat is a densely vegetated pond near an open hillside where they can sun themselves, feed, and find cover in rodent burrows; however, considerably less ideal habitats can be successfully occupied. Temporary ponds and other seasonal freshwater bodies are also used. The snakes avoid brackish marsh areas because their preferred prey ([California red-legged frogs](#), *Rana aurora draytonii*) cannot survive in saline water. Emergent and bankside vegetation such as cattails (*Typha* spp.), bulrushes (*Scirpus* spp.) and spike rushes (*Juncus* spp. and *Eleocharis* spp.) apparently are preferred and used for cover. The area between stream and pond habitats and grasslands or bank sides is used for basking, while nearby dense vegetation or water often provide escape cover. Snakes also use floating algal or rush mats, if available.

Adult snakes sometimes estivate (enter a dormant state) in rodent burrows during summer months when ponds dry. On the coast, snakes hibernate during the winter, but further inland, if the weather is suitable, snakes may be active year-round. Recent studies have documented San Francisco garter snake movement over several hundred yards away from wetlands to hibernate in

upland small mammal burrows. Although primarily active during the day, captive snakes housed in an outside enclosure were observed foraging after dark on warm evenings.

San Francisco garter snakes forage extensively in aquatic habitats. Adult snakes feed primarily on California red-legged frogs (which are Federally listed as threatened). They may also feed on juvenile bullfrogs, but they are unable to feed on the larger adults. Adult bullfrogs likely prey on smaller San Francisco garter snakes, and may be a contributing factor in their decline. Newborn and juvenile San Francisco garter snakes depend heavily upon Pacific treefrogs (*Hyla regilla*) as prey. If newly metamorphosed Pacific treefrogs are not available, the young may not survive. San Francisco garter snakes are one of the few animals able to eat the toxic California newt (*Taricha torosa*) without suffering serious side effects.

DISTRIBUTION:

Historically, San Francisco garter snakes occurred in scattered wetland areas on the San Francisco Peninsula from approximately the San Francisco County line south along the eastern and western bases of the Santa Cruz Mountains, at least to the Upper Crystal Springs Reservoir, and along the coast south to Año Nuevo Point, San Mateo County, and Waddell Creek, Santa Cruz County.

Currently, although the geographical distribution may remain the same, reliable information regarding specific locations and population status is not available. Much of the remaining suitable habitat is located on private property that has not been surveyed for the presence of the snake. The Service is aware, however, that many locations that previously had healthy populations of garter snakes are now in decline for the reasons described below.

SPECIAL CONSIDERATIONS:

(For more information see the San Francisco Chronicle article [Colorful Bay Area denizen slithering away; 'Beautiful serpent' suffering effects of urbanization](#), April 22, 2004)

Many of the threats that led to the listing of the San Francisco garter snake in 1967 continue to impact the species. These included loss of habitat from agricultural, commercial and urban development and collection by reptile fanciers and breeders.

These historical threats to the species remain, but there are now additional threats to the species, such as the documented decline of the California red-legged frog (an essential prey species) and the introduction of bullfrogs (*Rana catesbeiana*) into San Francisco garter snake habitat. Bullfrogs are capable of preying on both San Francisco garter snakes and California red-legged frogs.

Extirpation of California red-legged frogs in San Francisco garter snake habitat is likely to cause localized extinction of the snake.

REFERENCES FOR ADDITIONAL INFORMATION:

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Photo credit: U.S. Fish & Wildlife Service

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